FOREWORD

The U.S. Environmental Protection Agency (EPA) has been very pleased to work in partnership with Argentina, Brazil, Chile, China, Korea, and Mexico in evaluating the public health and environmental benefits of integrated strategies for greenhouse gas mitigation and air pollution control. Many countries, are struggling to balance economic development, long-term environmental risk minimization (i.e. global change), and critical near-term environmental concerns (i.e. improvements in air quality and human health). Effective integration of climate change and local environmental strategies can make use of limited resources for greenhouse gas emissions reduction and other national and local environmental protection programs simultaneously. In 1998, EPA initiated the International Co-Benefits Analysis Program (ICAP) as a vehicle for international cooperation on methods for addressing these critical opportunities.

The program is based, in part, on analytical methodologies developed and applied in the United States 1990s to evaluate the health and environmental benefits of a variety of greenhouse gas and clean air policies. We believe that this work is of critical value in supporting the development and implementation of cost-effective measures that will achieve important global climate change and local air pollution control objectives. In the energy sector, for example, participating countries can simultaneously reduce emissions of local air pollutants (especially particulate matter and acid rain and ozone precursors) and emissions of greenhouse gases. The work described in this report, as well as recent studies supported by EPA and other institutions, has demonstrated the potential for significant air pollution, human health, and economic benefits of integrated climate change and air pollution energy sector measures.

The initial studies carried out over the past two years were intended to provide preliminary analysis demonstrating the feasibility of the multi-disciplinary methods in number of countries, and highlighting the potential quantitative benefits of integrated strategies. In addition, and equally important, they were intended to assist in the development of human and institutional capacity to continue to carry out and improve such analysis in the participating countries in the future. Relative to all of these objectives, the activities of the national teams have been very successful indeed. I offer my personal congratulations and appreciation for the outstanding work of the teams of government officials and technical experts from the participating countries in conducting their initial assessments of climate change and air pollution co-benefits and integrated strategies that are described in this report.

Nonetheless, this report is best seen as a major step in a longer term process, rather than as a final product. There is much work remaining to be done, and EPA is committed to working with our partners to continue the progress is several important ways.

(1) We expect to continue working with the initial set of countries to improve quality and completeness of analyses for all participating countries, and to encourage development of long term capabilities in these countries;

(2) We hope to continue expanding the network of participating organizations. This year we will initiate work with South Africa, and possibly other countries. A major focus of efforts for the next year will be to increase collaboration with a wide range of international donor organizations and leading technical institutions, as well as with U.S. organizations focused on promoting integrated approaches at the local, state and national levels.

(3) We expect to increase emphasis on methods and tools for identifying and screening integrated strategies to capture multiple benefits and enhance efficiency of environmental strategies. In the first phase of the work, the emphasis was on linking existing elements of multi-disciplinary analysis to demonstrate the ability to carry quantitative analysis from scenarios through emissions changes, air quality modeling, public exposures, health dose-response functions and economic valuation. Now that this step is complete in several countries, it is crucial to define and analyze strategies which can take greater advantage of opportunities for multiple benefits.

(4) We expect to expand the scope of the analysis of integrated strategies. While initial work focused on the energy sector, on air pollution, and on human health impacts, we also see potential for significant benefits of integrated strategies other sectors, other local pollution issues, and for non-health related environmental and economic impacts. A priority for the near-term is to incorporate methods for quantifying a range of local economic benefits of clean technology strategies which often include: increased economic efficiency, reduced fossil fuel costs, increases in employment and small business development, and reduced foreign exchange requirements for the local economies. In the future, we hope to continue to extend the scope of ICAP to address more of these sectors and impacts.

This report provides an overview of the methods and preliminary results from the ICAP work to date. We expect that this will be the first in a series of international reports on this topic designed to share the results of these important assessments with the international community. To promote international dialogue and better understanding of integrated strategies, we have established an ICAP web site (www.nrel.gov/icap) and are assisting the countries in presenting this work at various conferences and workshops. On this web site and elsewhere in this report, contact information is provided, and we would be very pleased to learn about additional opportunities to collaborate with other institutions to support development of integrated environmental strategies and help expand the scale and effectiveness of the current program. Our goal is to promote widespread use of these methods and understanding of the important value of the development of these strategies.

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